

Anacostia originally used the call letters NSF, and this call is still used for other than experimental work.

NOF is the laboratory call and used for the concerts and all other experimental work.

In response to the inquirter received

In response to the inquiries received from those interested in the technical aspects of the NOF broadcasting installation, the following brief descrip-

of NOF is its successful use of the mul-

The high radiation obtained at this

MARINE BAND NOW PLAYS TO MILLIONS BY RADIO

"Stand By for NOF" Brings National Audience—Some Details of Laboratory At Anacostia.

COMMANDER STANFORD C. and depend on their imagination for applause, except as it comes in later in the form of letters written by those who are willing to go to this trouble, and it is, indeed, gratifying that so many of our people express their gratitude in this form. Bureau of Engineering, Navy

Copyright, 1922, by Stanford C. Hooper. All rights reserved.) The Washington Marine Band. through radio, will soon play to an

audience of millions.

True, this audience is divided into innumerable small groups and is invisible to the performers, but nevertheless it comprises in the whole a tion is given: vast and critical audience of the most intelligent classes of our people, for whom it is safe to say that the radiophone is no longer considered a fad, but a medium for whole- wave lengths ranging from 190 meters some amusement, entertainment and to 3,000 meters. This antenna consists

the exact number of our people who guyed masts. There are five down leads the exact number of our people who guyed masts. There are not and der especially listen in on NOF Wednesdays and instead of one as used with the ordiconditions.

The down leads are The reliable effective night time range broadcasting gradually increasing area covered, as indicated by correspondence received end, one in the center and one on each from radio fans throughout the country, the number must now be well over the two hundred thousand mark.

The down leads are The reliable effective night time range and one are each one in the center and one on each side halfway between center and end. Variable inductances are placed in each lead at the ground end and protected from the station, judging the remainder of NOF for radiophone broadcasting during the heavy static season now appears to be not less than 1,000 miles in ill directions from the station, judging the range function of the reliable effective night time range. indicated by correspondence received from radio fans throughout the country, the number must now be well over the two hundred thousand mark. As stated in a previous article the Marine Band concerts are broadcasted from NOF on 412 meters on Wednesday of each week, from 8:30 to 9:30 p.m., 75th meridian standard time. The Navy Yard Band concerts are broadcasted at the same time on Friday. All are experimental concerts to help the Navy's radio engineers at the Anacostia laboratory to improve the radiophone, assisted by constructive criticisms on the priday of the radio fans throughout the United States as outlined in my article of June 25.

(ause for Vonder.

The Mghr radiation obtained in side halfway between center and one on each side halfway between center and erd. Variable inductances are placed in each lead at the ground end and protected from the weather by small wooden boxes built around them on the ground. Each down lead at the ground end and protected from the weather by small each at the ground end and protected from the weather by small each at the ground end and protected from the weather by small each at the ground end and protected from the weather by small wooden boxes built around them on the ground the soulline from the weather by small wooden boxes built around them on the ground the lead at the ground end and protected from the weather by small wooden boxes built around them on the ground th

To sit in the quietude of one's home, whether it be the isolated farmhouse a thousand miles from Washington or the apartment of the professional man in a distant city, and to pick out of the air music from a massed out of the air music from a massed band or a delightful violin solo band or a delightful violin solo watt plietrons operated with 1,500 to decision against her was played in Washington, naturally is a 1,600 volts on the plates. At present within the prescribed time limit. cause for wonder and admiration, and obviously there are few people who are not curious to know just how it is all managed, hence numerous re-

is all managed, hence numerous requests have come in from several states asking for a description of the NOF station.

Doubtless most people form in their minds pictures of a formidable array of powerful electrical machinery and apparatus with showers of electric sparks or something of that nature

and apparatus with showers of electric sparks or something of that nature.

Every day we have requests for permission to visit one or other of the naval radio stations, especially the great high-power stations, and it is obvious that it is expected that most interesting sights will be seen. Without doubt, the visits result largely in disappointments because really there is very little to see from the spectacular viewpoint.

True, there are immense steel towers extending up so high that the

True, there are immense steel towers extending up so high that the large insulators and antenna wires suspended therefrom are barely visible from the ground, and in the operating building there are one or more rapidly revolving electrical generators with their slightly humming noise and various large instruments, inductances, switchboards with numerous electrical indicating instruments, etc., but these have a more or less commonplace appearance, little different from any ordinary electric powerhouse. powerhouse.

No Visible Sparks.

There are no visible sparks or other striking evidences of electric energy. Modern radio transmitters are nearly as silent in their functioning as the radio receivers which bring in the concerts and, except that they are much larger in dimensions, little more spectacular from a cursory inspec-

At the Anacostia laboratory an extensive array of testing apparatus. electrical measuring instruments. electrical measuring instruments, tubes of various types and sizes, etc., will be found, but the transmitting set which flings the concerts out into space in the form of sound waves impinged on ether waves consists of rapidly revolving small electric generators. a few brightly lighted tubes about five or six times the size of an ordinary electric light bulb, and the essectived appraetus consisting of a

ordinary electric light bulb, and the associated apparatus, consisting of a few small inductances, condensers, indicating instruments, etc.

The functioning of the apparatus itself produces absolutely no sound except the slight hum of the revolving generators which deliver electric power to the tubes.

Curtains are draped about to minimize as far as possible undesirable reverberations of sound.

From the spectacular viewpoint there is little more of interest than the sight of an orchestra playing in any concert hall or a band in a public park.

Unheard Ether Waves.

The radio transmitter produces in isible unheard ether waves on which is impinged the equivalent of the sounds produced while the band is playing and music is radiated from the antenna into space.

There is no visible audience and there follows no applause at the finish of a solo or of the concert, no matter how delightful, and the musicians must look to their art for inspiration

alternating current supply at the laboratory.

The master-oscillator is a fifty-watt coated filament tube and the master-modulator is a similar tube. The master-oscillator is coupled to the grids of the power-amplifier tubes with a fairly loose coupling so that the amplifier tubes themselves will not oscillate. A five-watt speech amplifier tube precedes the modulator tube.

The set may be operated directly at the laboratory or from a distant land telephone station. When operated from a distant land telephone station, an additional five-watt tube amplifier is used between the incoming speech over the telephone line and the speech amplifier tube previously mentioned, which is a part of the set.

This amplifier has capacity coupling with the regular speech emplifier. Power for the set is derived from

three-phase sixty-cycle motor direct coupled to a generator whose full load voltage runs from 700 to 1,600 volts. A half-way tap is available on the gen erator so that half of the voltage may be used for operating the master set. onse to the inquiries received se interested in the technical suitable filters are placed in the three lines from the generator to reduce commutator and slot ripples.

The broadcast wave of 412 meters has been carefully chosen to avoid interference with other eastern broadcasting stations, and it has now been clearly demonstrated that signals from NOF can

of NOF is its successful use of the multiple tuned transmitting antenna on the readily tuned out with a properly designed receiver, even at points only a few miles from the laboratory.

Radio telegraph signals from NOF have been heard in England, on the Pacific coast of the United States, in the Hawaiian Is.ands and off the mouth of the Origon river in South America, un-

the Orinoco river in South America, un-der especially favorable atmospheric

DIVORCE DENIAL APPEAL OF EDITH GOULD IS LOST

New York Supreme Court Upholds Dismissal of Complaint by Justice Mullan.

Associated Press. NEW YORK, July 15.—Edith Kelly Gould was blocked again today in her attempt to sue in this country for divorce from Frank J. Gould, who

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3/4-Carat Pure-white Solitaire Diamond Ring, Tiffany mounting\$125 \$300 Blue-white Solitaire Diamond Ring, hand-

some platinum mounting.....\$225 21/4-Carat Perfect Solitaire Diamond Ring, handmade mounting......\$350 \$125 Lady's Diamond Cluster Ring, platinum setting\$75

\$750 Diamond and Sapphire Flexible Bracelet, all platinum......\$550 \$150 Blue-white Diamond Scarfpin\$100 \$850 Diamond Bar Pin (blue-white gems)....\$650 \$1,750 Diamond Flexible Platinum Bracelet

(blue-white gems) \$1,250 Diamond Masonic Ring, 14-kt. gold mounting (very handsome) \$25 1/2-Carat Man's Solitaire Diamond Ring \$50

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BY RADIO TODAY Complete Programs of Radio

Broadcasting Stations.

aspendent.

10 a.m.—Weather forecast for New England, New York, Pennsylvania, New Jersey, Maryland, the District of Columbia, North and South Carolina. Georgia, Florida, Alabama, Mississippi, Tennessee, Kentucky, West Virginia and Ohio, on 3,350 meters.

10 30 p.m.—Time signal; weather report; ship orders; 2,650 meters.

10 30 p.m.—Naval press news on 1,650 meters.

Except where noted, sending is CW 1,550 meters.

Except where noted, sending is CW 1,550 meters.

WJZ—Weatinghouse, Newark, N. J.

(360 Meters—Eastern Daylight-Saving Time—Deduct One Hear):

3:00 p.m.—Radio Chapel Service by Dr. Frank Mason North, former predident of Federal Council of Churches of Christ in America, and corresponding Secretary of the Board of Foreign E Missions of the Methodist Episcopal Couren. His sermon with be on the subject of foreign missions.

from the "Bubble Books That Sing."
by Raiph Hayhew.
4:45 p.m.—Sandman Stories," told
by Kaspar Seidel.
7:80 p.m.—Adventure stories for
boys and girls. Navy yarns from "Sea
Fighters," by Warren H. Miller.
7:45 p.m.—"New Ideas in Home
Building." by Gardner Teall of the Independent.
5:00 p.m.—Musical program by W.
Goble, tenor.

Perkins will accompany her at the plano.

Program—"Merrily I Roam," Schleiffarth; "One Fine Day," from "Mme. Butterfy," Puccini; plano solo, "Leschetitsky Mazurka"; "Just Awearyin for You," Carrie Jacobs Bond; "A Bowl of Roses," Clarke; "O Bocca Dolorsa," Sibella: "The Owl," John Barnes Wells; "The Americans Come," Fay Foster.

KDKA Westinghouse, East Pittsburgh (300 Meters Eastern Standard Time).

10:40 a.m.—Services of Calvary Episcopal Church, Shady avenue, Pittsburgh, Pa. Rev. E. J. Van Etten, rector, Harvey, B. Gaul, organist and director

3:30 p.m.—The Rev. Hugh M. Mac-Ill., will conduct KYW's Radio Chapel

services.

The subject of his sermon is 'The Way, the Truth and the Life.'

The music for the service is under the direction of M. E. Coleman, choir-

Lika - Westing acuse, East Pittsburgh (300 Meters - Enatern Standard Timel.

10:00 - a.m. - Services of Calvary
Episcopal Church, Shady avenue, Pittsburgh, Pa. Rev. E. J. Van Etten, rector, Harvey, B. Gaul, organist and director.

1:15, p.m. - Children's Bible Story—

Kingdom," Duct, "Mercy" Gotts-

1923 CONVENTION PLACE.

Meet Next in Indianapolis. MINNEAPOLIS, Minn., July 15.—
Veterans of the Rainbow Division chose Indianapolis as their 1923 convention city at the close of their annual reunion here today on next July 14, 15 and 16.

"Wild Bill" Donovan of New York, colonel of the famous "Fighting 69th," today was unanimously elected national president of the Rainbow Veterans' Association in closing sessions of the annual reunion of the veterans of the 42d Division.

NEW YORK, July 15.—A woman found suffering from amnesia on Staten Island Thursday as a result of a terrific teating regained her memory today and said she was Helen Greiner of St. Louis. Miss Greiner, who came to New York with her brother, a cattle buyer, said she had been beaten unconscious by a taxics driver when she refused to pay what she considered an excessive fare for taking her to the wrong destina-

SPECIAL CLERK PROVIDED

Controversy in Richmond Settled Following Conference Between Dr. Work and Senator Swanson.

Br. Work and Senator Swanson.

Special Dispatch to The Star.

RICHMOND, Va., July 15.—As a result of the activity of Senator Swanson, who last Thursday had a conference with Postmaster General Work, there will be a clerk in the local post office here for the certifying of ballots that are to go by mail to homes of voters who will be unable to get to the votting places.

Senator Swanson when he talked with Dr. Work said that he would pay the costs of such a clerk. The matter was brought about when the postmaster in Richmond refused to give the time to the work of certifying ballots.

ARMY OFFICERS RETIRE.

Sterno Canned Heat For Instant Cooking

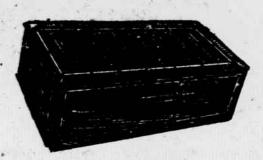
EXTRA! STERNO Canned

A new low price on this convenient necessity-our price last week was 95c dozen

Two Cans Sterno Heat FREE

We have a splendid little Sterno Cooking Outfit that sells for \$1-it is complete and ready for use. With every purchase of these outfits we will give you two cans of heat free.





This 50-Cigar

Humidor FREE!

This beautiful humidor is as good as it looks-well and strongly made to hold 50 cigars and to keep them perfectly.

If you'll purchase from us one box of 50 Carl Mitchell Cigars at the regular price, \$4, we will give you this humidor free.

It's not to introduce Carl Mitchell Cigars, because they have been well and favorably known for many years—but rather that you may keep them in the best condition.

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This Exquisite New Colgate's Compact

Price, \$1.00

-and we will engrave one initial on it for you without charge. The compact consists of a superb face powder incased in a gold-finished hinged vanity, beautifully embellished and containing mirror. It is a splendid value and you'll surely want one.

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Court Plaster 5c
1-inch by 1-yard Adhesive Tape 10c
Germicidal Soap 20c
Gause Bandage, 6 yards for 5c
New Skin
Absorbent Cotton 5c to 65c
Waxed Paper, 4 rolls for 10c
Metal Soap Boxes
Pullman Hairbrushes\$1.19 to \$1.39
Powder Puffs

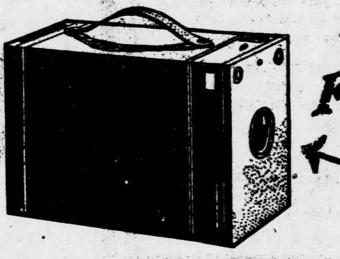


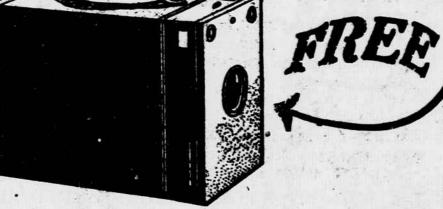
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60c Car Mac Tooth Paste: 39c
25c Woodbury's Facial Soap 19c
25c Woodbury's Facial Soap 19c
25c Dermatone Soap, 19c; 3 for 50c
25c Resinol Soap, 20c; 3 for 55c
Mirror Nail Polish 35c
60c Forhan's Tooth Paste 35c
Fompeian Massage Cream, 45c, 69c and 89c
Hudnut's Marvelout Cold Cream, 25c
50c and 51.00
Dame Nature Skin Improver, 29c and 45c
\$1.00 Barnard's Complexion Cream 69c
Pear's Soap (Unscented) 12c
Pear's Soap (Unscented) 16c
Palm Olive Soap, 8c each; dozen 89c
Packer's Tar Soap, 21c; 3 for 60c
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Corylopsis Talc 17c
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wrapper. You'll get a REAL BIG CIGAR VALUE if you buy several boxes of these at the special price of 89c per box of 25. Cigars sell at 5c each.



odors; it's so easy and pleasant to use and so harmless and sure in its results that it is rapidly becoming a favorite. Price. Just the Thing! Don't put up with pains and misery of bunions— it's entirely unnecessary FAIRYFOOT

Smart Bathing Caps, 19e to 89e.
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Kills Perspiration

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and colorless liquid that ef-

fectively kills per spiration

Here's a stainless, odorless

Don't Suffer With Hay Fever -when positive relief may

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Not an experiment, but a tried and proven remedy. Nothing to snuff; no lotion to apply that irritates the already inflamed membranes. HAY-FER is a capsule treatment; a perfectly harmless formula, giving immediate relief in the most aggravated and persistent cases of Hay Fever. No matter how chronic the case take HAY-FER and you'll find the symptoms that are nearly driving you mad quickly disappear, leaving you perfectly normal.

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